

Science and Engineering Extravanzas - Students Become Engineers for a Day

For the past seven years, INL has partnered with Northwest Nazarene University (NNU) and Boise State University (BSU) to offer hands-on, inquiry-based science workshops to Treasure Valley educators and students. This year, from Jan. 29-Feb. 2, close to 2,000 students and teachers had the chance to experience the world of engineering through interactive workshops and engaging seminars.

Students who attended the Engineering Extravanza at BSU explored Newton's laws and rocket science with INL scientist Kevin Young. They learned how the basic rocket engine works, how gravity and velocity keep a satellite in orbit, and how satellites send information back to Earth. Students also rotated through sessions where they designed and built bridges and saw demonstrations by BSU engineering students on the function of hydro-turbines, how a wind tunnel tests aerodynamics, the properties and effects of liquid nitrogen, and the physics behind the Segway transport.

At NNU, students were introduced to Idaho amphibians and held salamander races to examine salamander locomotion. Participants saw demonstrations on pressure using a vacuum chamber, a marshmallow gun and a vortex cannon. They constructed their own ecospheres, explored the human brain, examined how air pollution forms, and learned how meteorologists analyze data to make weather forecasts.

These annual workshops give teachers an opportunity to help students make the connection between what they are learning in school and how it relates to real world applications. In concert with these weeklong sessions, INL also partners with BSU and numerous business and civic groups to present Discover Engineering at Boise State University. The free event, held this year on Feb. 2-3, provided area families an opportunity to experience a day of hands-on engineering and science activities. Because of growing popularity, this year INL and its co-sponsors welcomed more than 2,000 participants to the event.

Entrepreneur Caleb Chung, inventor of Furby and the new interactive life form Pleo, shared his creative process and how he turns dreams and ideas into reality. Participants built rockets with NASA education specialist Tony Leavitt. They learned the language of computers using jelly beans, learned how the police bomb squad uses robots, and explored the sources of electricity, among numerous other hands-on activities.

Holly MacLean, principal of the Treasure Valley Mathematics and Science Center, attended Discover Engineering at BSU and said, "I was so impressed with the quality of demonstrations and the ability of the presenters to bring it down to an understandable level for such diverse audiences. Every one of the people that we listened to turned out to be excellent."

The intent of these efforts is to raise the level of interest and understanding of the many aspects of engineering and encourage young people to consider careers and coursework in the science, math and engineering fields. It also provides the opportunity to highlight the multiple aspects of engineering in Idaho.

Sponsors for Discover Engineering included: Boise State University, Boise Independent School District, Boise Police Department, Crucial Technology, Discovery Center of Idaho, Idaho Department of Environmental Quality, Idaho Office of Science and Technology, Idaho Power, Micron Technology, Inc., NASA, United Water, University of Idaho and Washington Group International.

More information about the events is available at <http://jasonidaho.boisestate.edu/>.

Photo: Students use catapult

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An engineer from Micron Technology, Inc., uses a catapult to teach students how engineers solve problems using the scientific method.

Photo: Students study brain

Students create and label their own "mini-brains" after the NNU cadaver dissection team gives an overview of human brain anatomy.